ABSTRACT OF THE DISCLOSURE

A method for producing a photostimulable phosphor represented by a following General Formula (1), includes subjecting phosphor particles in the photostimulable phosphor to a surface treatment by using a fluorine-containing compound after calcining the phosphor particles: General Formula (1), $(Ba_{1-x}M^1)FBryI_{1-y}X:aM^2$, bLn, cO wherein M^1 is at least one alkaline earth metal atom selected from Mg, Ca, Sr, Zn and Cd; M^2 is at least one alkaline metal atom selected from Li, Na, K, Rb and Cs; X is at least one halogen atom selected from Cl, Br and I; Ln is at least one rare earth atom selected from Ce, Pr, Sm, Eu, Gd, Tb, Tm, Dy, Ho, Nd, Er and Yb; and x, y, a, b and c are numbers within the range of $0 \leq x \leq 0.3$, $0 \leq y \leq 0.3$, $0 \leq a \leq 0.05$, $0 < b \leq 0.2$ and $0 < c \leq 0.1$, respectively.